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- Argentina, *Leptodactylus* (*bufonius*, *gracilis*, *latinasus*, *mystacinus*, *ocellatus*) 728-737; *Galaxias maculatus* 978-979.
- Ascension Island, *Chelonia mydas* 703-706.
- Australia, *Crinia* (*laevis*, *victoriana*) 171-175; *Lialis burtonis* 297-304; *Egernia cunninghami* 338-348; *Pseudemadura umbrina*, *Elseya* (*latisternum*, *dentata*), *Emydura* (*macquaria*, *kreffti*, *australis*), *Chelodina* (*steindachneri*, *longicollis*, *novaeguineae*, *oblonga*, *expansa*) 392-408; *Carcharhinus lamia*, *Galeocercus cuvieri* 780-781; *Siganus vulpinus* 856; *Pipidonia* n. sp. 878; *Egernia cunninghami*, *Tiliqua rugosa*, *Physignathus lesueurii*, *Amphibolurus barbatus* 920-921; *Acanthurus lineatus* 950; *Galaxias maculatus* 978.
- Bahamas, *Cerdale floridana* 409-428; *Eupomacentrus mellis* 880.
- Botswana, *Phrynobatrachus ukingensis* 827.
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- British Solomon Islands, *Siganus vulpinus* 856.
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- Ceylon, *Pipidonia* n. sp. 878.
- Chile, *Galaxias maculatus* 978-979.
- China, *Rana japonica* 821.
- Colombia, (eastern Pacific Ocean) *Diplectrum rostrum* 61-65; (eastern Pacific Ocean) *Merluccius angustimanus* 564-566; *Leptodactylus* (*insularum*, *labialis*, *latinasus*, *mystaceus*) 728-737.
- Congo, *Phrynobatrachus gutturosus* 827.
- Costa Rica, (eastern Pacific Ocean) *Platyglilellus* (*bussingi*, *altivelis*) 39-42, 49-54; *Melaniris guatemalensis* 123; (both Caribbean Sea and eastern Pacific Ocean) *Cerdale* (*floridana*, *ionthas*, *paludicola*), *Clarkichthys bilineatus* 409-448; (*Caribbean Sea*) *Chelonia mydas* 758-763; *Eleutherodactylus bransfordii* 823; (eastern Pacific Ocean) *Pelamis platurus* 909.
- Czechoslovakia, *Gymnocephalus* (*baloni*, *cernua*, *schraetser*) 471-485.
- Ecuador, (eastern Pacific Ocean) *Platyglilellus rubellulus* 39-49; (*Galapagos Islands*) *Tropidurus albamariensis* 149-154; (*Galapagos Islands*) *Clarkichthys bilineatus* 409-448.
- El Salvador, *Melaniris guatemalensis* 123.
- Ethiopia, (*Red Sea*) *Hoplostethus oreni* 470.
- Europe (western), (various countries) *Gymnocephalus* (*acerina*, *baloni*, *schraetser*, *cernua*) 471-485.
- Falkland Islands, *Galaxias maculatus* 978.
- Fiji, *Siganus uspi* 855.
- Ghana, *Geotrypetes seraphini* 764-769; *Phrynobatrachus* (*natalensis*, *gutturosus*) 827.
- Grenadines (Lesser Antilles, West Indies), *Cerdale floridana* 409-428.
- Guam, *Hoplostethus starcki* 464-466.
- Guatemala, *Melaniris* (*guatemalensis*, *meehi*) 122-123; *Strongylura hubbsi* 611-619.
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- Haiti, *Cerdale floridana* 409-428.
- Honduras, *Roeboides guatemalensis*, *Hyphesobrycon tortuguerae*, *Gymnotus cylindricus*, *Rivulus tenuis*, *Melaniris* (cf. *chagresi*, *guia*), *Cichlasoma* (*dowi*, *robertsoni*, *aureum*) 120-124.
- India, (*Indian Ocean*) *Hoplostethus fronticinctus* 461-463; (*Indian Ocean*) *Narke* (*Bengalichthys impennis*) 791-792; (*Indian Ocean*) *Ilisha whiteheadi* 861-864.
- Indian Ocean (western), *Bathytyphlops* (*marionae*, *sewelli*) 570-573.
- Indonesia, (*Celebes*) *Anguilla* (*marmorata*, *celebesensis*, *bicolor pacifica*, *borneensis*) 569-570; *Siganus vulpinus* 856; (*Timor Sea*) *Carapus homei* 971.
- Iran, (*Gulf of Oman*) *Stalix omanensis* 280-283.
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- Japan, *Stalix histrio* 280-283; *Rana* (*japonica*, *tsushimensis*, *ornativentris*, *dybowskii*, *tagoi*, *limnocharis*) 815, 821.
- Kenya, *Phrynobatrachus* (*ukingensis*, *natalensis*, *acridoides*) 824-827.
- Liberia, *Phrynobatrachus gutturosus* 827.
- Malagasy (Madagascar), *Paroedura* (*gracilis*, *oviceps*, *sanctijohannis*, *homalorhinus*, *guibae*, *stumpffi*, *androyensis*, *pictus*, *bastardi*) 24-29.
- Malawi *Phrynobatrachus* (*natalensis*, *gutturosus*, *acridoides*, *ukingensis*) 823-832; *Rana fasciata* 829; *Ptychadena* spp. 829; *Pyxicephalus adspersus* 829.
- Marshall Islands, *Hoplostethus starcki* 464-466; *Scarus* (*gibbus*, *jonesi*) 796-799.

- Martinique, *Cerdale floridana* 409-428.
- Mauritius, *Hoplostilatus fronticinctus* 461-463.
- Mexico, (general) *Chiostoma grandocule*, *Poblana alchichica*, *Hubbsina turneri*, *Allostoca vivipara* 277-279; *Clarkichthys bilineatus* 409-448; *Strongylura hubbsi* 611-619; *Leptodactylus melanonotus* 728-737; *Xenotoca (eiseni, melanosoma)* 848-853; *Xantusia henshawi* 935; (Baja California) (eastern Pacific Ocean) *Taenioconger canabus* 55-60; (Coahuila) *Crotaphytus (collaris, reticulatus)* 87-101; (Gulf of California) *Diplectrum rostrum* 61-65; (Gulf of California) *Cephalurus cephalus* 556-560; (Sonora) *Leptodactylus melanonotus* 728-737; (Yucatan) *Fundulus persimilis* 319-329.
- Mozambique, *Phrynobatrachus acridoides* 827.
- New Caledonia, *Siganus vulpinus* 856.
- New Guinea, *Elseya novaeguineae*, *Emydura subglobosa* 392-408.
- New Zealand, (Chatham Island and elsewhere) *Galaxias maculatus* 978.
- Nicaragua, *Roeboides guatemalensis*, *Hyphesobrycon tortuguerae*, *Cichlasoma dowi* 120-124.
- Nigeria, *Phrynobatrachus gutturosus* 827.
- North America, (eastern) (various states) *Percina* (28 spp.), *Ammocrypta pellucida*, *Etheostoma* (3 spp.) 66-86; (various states) *Fundulus* (19 spp.) 136-140.
- Pacific Ocean, (general) *Cyclothone (alba, braueri, pseudopallida)* 272-274; (eastern-tropical) *Taenioconger canabus* 55-60; (eastern-tropical) *Diplectrum rostrum* 61-65; (eastern-tropical) *Cerdale (ionthas, prolata, paludicola)*, *Clarkichthys bilineatus* 428-448; (eastern-tropical and temperate), *Scopelarchoides nicholsi*, *Scopelarchus (guentheri, analis)*, *Rosenblattichthys volucris* 449-457; (eastern-tropical) *Taenioconger* spp., *Gorgasia* spp. (leptocephali) 494-500; (eastern-tropical and subtropical) *Letharchus rosenblatti*, *Paraetharchus (opercularis, pacificus)* 619-629; (eastern-southeastern) *Thalassobathia nelsoni* 629-632; (eastern) *Symphurus atramentatus* (larvae) 890; (tropical Indo-Pacific) *Rosenblattichthys alatus*, *Scopelarchoides (signifer, danae, climax)*, *Scopelarchus (guentheri, analis, michaelisarsii, stephensi)* 449-457.
- Palau Islands, *Hoplostilatus (fronticinctus, starcki)* 461-466; *Siganus vulpinus* 856.
- Panama, (eastern Pacific Ocean) *Platygillicellus altivelis* 39-42, 52-54; *Melaniris chagresi* 123-124; *Cerdale (ionthas, prolata, paludicola, floridana)*, *Clarkichthys bilineatus* 409-448; (Pearl Islands, Gulf of Panama) *Pelamides platurus* 531-533.
- Peru, *Tropidurus peruvianus* 149-154; *Leptodactylus (andreae, hylaedactylus, rhodonotus, pentadactylus, wagneri)* 728-737.
- Philippines, *Rana limnocharis* 821; *Siganus (unimaculatus, vulpinus)* 856.
- Ponape Island, *Siganus vulpinus* 856.
- Puerto Rico, *Anolis (crisatellus, stratulus)* 215-221; *Leptodactylus albilabris* 728-737; *Thalassoma bifasciatum*, *Gobiosoma (genie, evelynae)* 959.
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- Russia, *Gymnocephalus (acerina, cernua)* 471-485.
- Ryukyu Islands, *Rana okinavana* 815.
- Seychelles, *Barbuligobius boehlkei* 869.
- Society Islands, *Hoplostilatus cuniculus* 466-469.
- South Africa, (Indian Ocean) *Hoplostilatus fronticinctus* 461-463; (Indian Ocean) *exterilium* larvae from several families 886-887.
- Southwest Africa, *Phrynobatrachus natalensis* 827.
- Taiwan, *Rana longicrus* 815; *Barbuligobius boehlkei* 869-870.
- Tanzania, *Phrynobatrachus (natalensis, acridoides, gutturosus)* 827-828.
- Tasmania, *Galaxias maculatus* 978.
- Tuomoto Islands, *Hoplostilatus starcki* 464-466.
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- Alabama, *Etheostoma zonale zonale* 1-18; *Fundulus pulvereus* 319-329; *Speoplatyrhinus poulsoni* 486-493.
- Alaska, *Theragra chalcogramma* 791.
- Arizona, *Pituophis catenifer affinis* 141-148; *Coleonyx variegatus* 528-531; *Cnemidophorus tigris* (3 subsp.) 695-703; *Sceloporus magister* 991.
- Arkansas, *Etheostoma zonale zonale* 1-18; *Terrapene carolina triunguis* 512-527; *Graptomys (kohni, pseudogeographica ouachitensis)* 540-542.
- California, *Rana (muscosa, boylei)* 109-114; *Thamnophis (sirtalis, elegans)* 126-135; *Fundulus parvipinnis* 136-140, 210-214, 319-329; *Bufo boreas halophilus* 165-170; *Sceloporus occidentalis biseriatus* 176-182, 256-257; *Xantusia henshawi* 243-250; *Sceloporus undulatus erythrocheilus* 332-337; *Taricha (rivularis, torosa torosa, torosa sierrae, granulosa)* 506-511,

- 738-747; *Pimelometopon pulchrum* 789-790; *Hyla regilla* 883; myctophoid fishes (3 families) 839-847.
- Colorado, *Gopherus laticuneus* 102-108; *Sceloporus undulatus erythrocheilus* 332-337.
- Connecticut, *Fundulus* (*luciae*, *heteroclitus*, *majalis majalis*) 319-329.
- Delaware, *Fundulus* (*luciae*, *heteroclitus*, *majalis majalis*) 319-329.
- Florida, *Cerdale floridana* 409-428; *Chelonia mydas* 548; *Coryphaena hippurus* 548; *Sceloporus woodi* 689-694; *Rana sphenocephala* 773-778; *Eupomacentrus mellis* 880; *Exocoetis niger* 894; *Cyprinodon mydrus* (= *Floridichthys carpio*) 981; *Alligator mississippiensis* 993-996.
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- Hawaii, *Peropus mutilatus* 254; *Chelonia mydas* 542-544, 986.
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- Indiana, *Etheostoma zonale zonale* 1-18.
- Iowa, *Etheostoma zonale zonale* 1-18.
- Kansas, *Etheostoma zonale zonale* 1-18.
- Kentucky, *Etheostoma zonale zonale* 1-18.
- Louisiana, *Etheostoma zonale lynceum* 1-11, 18-22; *Fundulus* (*jenkinsi*, *pulvereus*, *grandis*, *majalis similis*) 319-329; *Graptemys* (*kohni*, *pseudogeographica ouachitensis*) 540-542.
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- Massachusetts, *Notophthalmus viridescens viridescens* 221-229; *Rana catesbeiana* 533-534.
- Minnesota, *Etheostoma zonale zonale* 1-18.
- Mississippi, *Etheostoma zonale lynceum* 1-11, 18-22; *Bairdiella chrysura* 266-269.
- Missouri, *Etheostoma zonale zonale* 1-18.
- Montana, *Gopherus* sp. 108; *Cottus bairdi* 980.
- Nevada, *Oncorhynchus tshawytscha* 305.
- New Jersey, *Fundulus heteroclitus* 792-794.
- New York, *Etheostoma zonale zonale* 1-18; *Apeltes quadracus* 183-193, 788-789.
- North Carolina, *Etheostoma zonale zonale* 1-18; *Fundulus* (*heteroclitus*, *majalis majalis*) 319-329; *Notophthalmus viridescens* 506-511.
- Ohio, *Etheostoma zonale zonale* 1-18; *Ericymba buccata* 271-272.
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- Oregon, *Oncorhynchus tshawytscha* 306; *Taricha granulosa* 506-511; *Hyla regilla* 883.
- Pennsylvania, *Etheostoma zonale zonale* 1-18.
- South Carolina, *Etheostoma zonale zonale* 1-18; *Rana* (*pipiens*, *clamitans*, *catesbeiana*, *areolata*, *palustris*), *Bufo* (*terrestris*, *quercicus*), *Gastrophryne carolinensis*, *Scaphiopus holbrooki*, *Acris gryllis*, *Pseudacris* (*nigrita*, *ornata*), *Hyla* (*crucifer*, *gratiosa*, *cinerea*, *squirella*) 236-242; *Agkistrodon* (*contortrix*, *piscivorus*), *Crotalus horridus*, *Elaphe* (*guttata*, *obsoleta*), *Masticophis flagellum*, *Pituophis melanoleucus*, *Abaster erythrogrammus*, *Farancia abacura*, *Natrix* (*erythrogaster*, *sipedon*, *taxipilota*), *Coluber constrictor*, *Heterodon* (*platyrhinus*, *sinus*), *Lampropeltis getulus*, *Ophedrys aestivus*, *Thamnophis* (*sauritus*, *sirtalis*) 501-506.
- Tennessee, *Etheostoma zonale* (*zonale*, *lynceum*) 1-22; *Graptemys* (*kohni*, *pseudogeographica ouachitensis*) 540-542; *Terrapene carolina carolina* 546-548.
- Texas, *Crotaphytus collaris*, *reticulatus* 87-101; *Fundulus* (*jenkinsi*, *pulvereus*, *grandis*, *majalis similis*) 319-329; *Hyla chrysoscelis* 534-536; *Terrapene carolina triunguis* 537-539; *Graptemys* (*kohni*, *pseudogeographica ouachitensis*) 540-542; *Alligator mississippiensis* 770-772; *Coleonyx brevis* 779-780; *Rana pipiens complex* 982.
- Utah, *Prosopium* (*spilonotus*, *abyssicola*, *gemmiferum*) 115-119.
- Virginia, *Etheostoma zonale zonale* 1-18; *Fundulus* (*luciae*, *heteroclitus*, *majalis majalis*) 319-329.
- Washington, *Gerrhonotus coeruleus principis*, *Sceloporus occidentalis*, *Chamaelea bottae bottae*, *Coluber constrictor mormon*, *Thamnophis ordinoides*, *Crotalus viridis oregonus* 255; *Cottus* (*asper*, *cognatus*) 980.
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- Wisconsin, *Etheostoma zonale zonale* 1-18.

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231; *Taenioconger* (digueti, n. sp. I, n. sp. II), *Gorgasia punctata* (growth of leptocephali) 494-500; *Pseudemys scripta elegans* (growth of an anophthalmic specimen) 548-550; *Sceloporus woodi* 691-693.

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latilus) 470; *Trachemys jarmani* (= *Chrysemys* sp.) 536; *Anguilla ancestralis* (= *Anguilla celebesensis*) 569; *Holotrachys* (= *Plectrypops*) 575; *Korsogaster* (= *Hoplostethus*) 575; *Korsogasteridae* (= *Trachichthyidae*) 575; *Strongylura hubbsi* 612; *Paraetharchus* (2 spp.), *Letharchus velifer* 621-622, 624; *Dysommidae* larva Type I (= [probably] *Dysomma anguillare*) 673; *Dysommidae* Type II or Type IV (= [possibly] *Atractodenchelys phrix*) 673-676; *Dysommina rugosa* Ginsburg, 1951 (= *Leptocephalus proboscideus* Lea, 1913); *Lo* (= *Siganus*) 858; *Rivulus robustus* 865; *Macgregorella* (= *Callogobius*) 878; *Abranches* (= *Pipidonia*) 878; *Eupomacentrus mellis* 880; *Pomacentrus planifrons* × *Pomacentrus leucostictus* of Rivas, 1960 (= *Eupomacentrus mellis*) 880; *Macristiella* (= *Bathytyphlops*) 973; *Macristium* (= *Bathysaurus*) 973-977; "*Macristium* sp." (= *Bathysaurus mollis*) 973-977; *Macristium chavesi* (= *Bathysaurus agassizi*) 973-977; *Cyprinodon mydrus* (= *Floridichthys carpio*) 981.

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Neotypes, *Cerdale ionthas* (designated) 415-416, 423; *Cyprinodon mydrus* (= *Floridichthys carpio*) (designated) 981.

Paratypes, *Etheostoma zonale zonale* 11; *Etheostoma zonale lynceum* 18; *Paroedura guibae* 27; *Pterolebias hoignei* 32; *Gillellus* (= *Platygilletus*) *rubellulus* 48; *Platygilletus bussingi* 50-51; *Platygilletus ativelis* 42, 54; *Taenioconger canabus* 56; *Diplectrum rostrum* 61-62; *Rivulus hendrichsi* 122; *Poblana alchichica* 277; *Cerdale (fasciata, paludicola)* 432, 439; *Scopelarchoides (climax, danae, signifer)* 453-454; *Scopelarchus stephensi* 455-456; *Hoplostilatus (starcki, cuniculus, fourmanoiri)* 464-467, 469; *Gymnocephalus baloni* 473, 476-478; *Speoplatyrhinus poulsoni* 487, 490-491; *Petrosirtes loxozonus* 566-567; *Corythoichthys tanakae* 567; *Blennius ellipses* 567; *Salarias andersoni* 567; *Salarias tanegasimae* 567-568; *Scorpaenopsis catacola* 568; *Hemipteronotus baldwini* 568; *Pomacentrus jenkinsi* 568; *Bathytyphlops marionae* 572; *Strongylura hubbsi* 617; *Letharchus (rosenblatti, aliculatus)* 626-627; *Thalassobathia nelsoni* 629; *Bengalichthys* (= *Narke*) *impennis* 791-792; *Siganus uspi* 859; *Ilisha whiteheadi* 861; *Rivulus robustus* 865; *Barbuligobius boehlkei* 871; *Eupromacentrus mellis* 880; *Charina bottae umbratica* 997.

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VARIATION

new species
lynceum
Platygilletus
(collaris)
spp. or
stoma
omanensis
datus)
(ionthas)
thys
Hoplostilatus
and n
cephalus
and b
(digue)
495-49
graphi
ductus
(ancest
azorens
559;
612-61
icus),
622-62
630;
refere
anom
western
only)
792;
surface

YOUNG

racus
hatch

VARIATION (morphological) (not including new species), *Etheostoma zonale* (zonale, lynceum) 3-22; *Pterolebias zonatus* 35-37; *Platygilhellus rubellulus* 42-45; *Crotaphytus (collaris, reticulatus)* 89-100; *Fundulus* (20 spp. or subsp.) (erythrocytes) 136-140; *Chirostoma grandocule* 278-279; *Stalix (histrio, omanensis)* 280-283; *Pristis (perotteti, cuspidatus)* (number of rostral teeth) 312; *Cerdale (ionthas, floridana, and new spp.)*, *Clarkichthys bilineatus* 415-428, 436-438, 441-446; *Hoplostilatus fronticinctus, fourmanoiri, oreni, and new spp.* 458-562, 465-470; *Gymnocephalus (cernua, acerina, schraetser, baloni, and baloni × cernua)* 476-483; *Taenioconger (diguetti, n. s. I, n. sp. II)*, *Gorgasia punctata* 495-499; *Graptomys (kohnei, pseudogeographica)* (head width) 541; *Merluccius (productus, gayi, angustimanus)* 565; *Anguilla (ancestralis, celebesensis)* 570; *Bathytrophops azorensis* 570-571; *Cephalurus cephalus* 558-559; *Strongylura (hubbsi, timucu, marina)* 612-616; *Paraetharchus (opercularis, pacificus)*, *Letharchus (velifer and two new spp.)* 622-624; *Thalassobathia (nelsoni, pelagica)* 630; *Trinectes maculatus* (with particular reference to pigmentary and morphological anomalies) 660-670; family Dysommidae (eight western North Atlantic species; leptocephali only) 672-680; *Narke (Bengalichthys) impennisi* 792; *Esox (a. americanus, niger)* (variation in surface pits of scales) 892-909.

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ZOOGEOGRAPHY, *Etheostoma zonale* (zonale, lynceum) 20-22; family Chelidae (Australia and New Guinea) 405-407; *Gymnocephalus (baloni, cernua, acerina, schraetser)* 484; family Proteidae (genera *Proteus* and *Necturus*) 641; freshwater fishes (100+ species) (vicinity of Victoria Falls, Zambia and Rhodesia; effect of falls as a zoogeographic barrier) 643-660; *Galaxias maculatus* (South American) 978-979.